Calibration Procedure for Fluke Digital Multimeter

I. Purpose:

This document describes the steps necessary for calibrating the Fluke 8842A Digital Multimeter, an auto ranging digital multimeter useful in the measurement of AC and DC voltages, current, and resistance.

II. Cautions and Hazards:

- There are no hazards.

III. Requirements:

- Fluke 5700A Calibrator, ANL P53636.

IV. Procedure:

A. Setting Up for the Calibration Procedure

1. Turn on power to the Fluke 8842A and Fluke 5700A Calibrator, allowing a 15-minute warm-up period.
2. Check the Fluke 5700A Calibrator DC ZERO as follows:
   a) Press “setup menu” and enter ***CAL MODE***.
   b) Press ***CAL***.
   c) Press ***CAL DATE*** and verify DC ZERO has been calibrated within the past 30 days. If not, enter ***CAL MODE*** and enter the current date.
   d) Press zero to redefine DC ZERO. ***Note: The function buttons are below display indicators.***

B. DC Voltage Calibration:

1. Set the Fluke 8842A to ***DC VOLTS***.
2. Using the 5700A Calibrator, perform all DC voltage measurements for all the indicated rages and record the results on each data sheet.
3. Set the Fluke 8842A to ***Autorange***.
4. Using the 5700A Calibrator, perform all additional DC measurements and record the results on each data sheet.

C. AC Voltage Calibration:

1. Set the Fluke 8842A to ***AC VOLTS*** and ***Autorange***.
2. Using the 5700A Calibrator, perform all AC voltage measurements with the Fluke 8842A and record results on each data sheet.

D. AC Current Calibration:

1. Set the Fluke 8842A to ***AC CURRENT*** and ***Autorange***.
2. Using the 5700A Calibrator, perform all AC current measurements with the Fluke 8842A and record the results on each data sheet.

E. DC Current Calibration:

1. Set the Fluke 8842A to ***DC CURRENT*** and ***Autorange***.
2. Using the 5700A Calibrator, perform all DC current measurements with the Fluke 8842A and record the results on each data sheet.

F. OHM Calibration:

1. Set the Fluke 8842A to ***kΩ 2*** wire and ***Autorange***.
2. Using the 5700A Calibrator, perform all ohm measurements with the Fluke 8842A and record the results on each data sheet. ***Note: The kΩ wire function is used for the 0Ω through 10Ω test values and the 2 wire comp. function on the 5700A Calibrator has to be on. The kΩ 4 wire function is used for the remaining test values, and the 2 wire comp. function on the 5700A Calibrator is turned off, and the SNS is turned on.***
3. Switch the Fluke 8842A to ***STBY***, remove all Test Leads-End of Test. If any of actual readings are beyond their tolerances, repair and/or recalibrate the instruments.

V. References:

1. Argon National Laboratory. Calibration Performed through Electronics & Computing Technologies Division CS4 Calibration System, pp. 1-2.

VI. Attachments:

None.